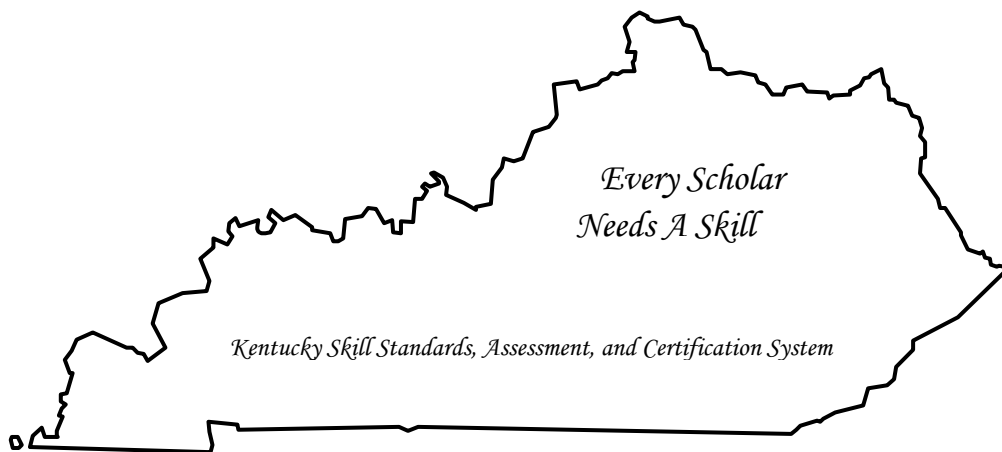


# *Kentucky*

## *Production Agriculture*

### *Skill Standards*



Established by the Production Agriculture Skill Standards Task Force

Revised  
July 2002

## *ACKNOWLEDGEMENTS*

As Project Coordinator for the Production Agriculture Skill Standards Project, I have been privileged to work with outstanding business and industry representatives and teachers from secondary agriculture programs across the state. This group has reviewed, endorsed, edited, rewritten, and revised documentation relating to this skill standards project.

The mission of the Production Agriculture Skill Standards Task Force was to develop a “user-friendly” document that would serve as a tool for instruction for all production agriculture teachers. Our hope is that schools/teachers will use this document as a framework for further curriculum development and alignment. Future plans for the Task Force will include regular reviews and updates to the document and development and review of skill standards assessment items.

A project of this significance relies heavily on the support and cooperation of many. The state effort could not have been accomplished without the persistence and guidance from Pamela Moore, State Skill Standards Project Director, and Mikala Rahn, national consultant for the effort. On behalf of the Kentucky Department of Education, Division of Career and Technical Education, I would like to acknowledge the support of the Production Agriculture Skill Standards Task Force and the contribution they made to this project. The following persons served on this task force:

Dr. Bruce Pratt, Eastern Kentucky University  
Dr. Todd Willian, Western Kentucky University  
Debbie Muse, Breckinridge Co. High School  
Doug Wilson, Jackson Co. High School  
Mike Jones, Shelby Co. High School  
Terry Burks, Breckinridge Co. Adult Education  
William Turpin, Madison Central High School  
Sylvester Dunn, Bell Co. High School

The following business and industry representatives assisted with the development and/or review of the project and have endorsed the attached standards:

Robert Cleveland, Woodford Feed Company  
J. Alvin Lyons, KY Young Farmers Association  
Coy Trapp, KY Department of Agriculture  
Steven R. Wade, Consolidated Grain  
Doug Eades, KY Communications  
Mark Rock, KY Young Farmers Association  
Chris Cooper, Bluegrass Stockyards

With Many Thanks,

Bruce Metzger, Agriculture Consultant  
Kentucky Department of Education  
Division of Career and Technical Education

## **INTRODUCTION**

### **Production Agriculture**

The Kentucky Education Reform Act identified fifty-seven Academic Expectations that every student should know and be able to do. Once these academic expectations were identified, it became the responsibility of educators to determine when a student had reached them. The Commonwealth Accountability Testing System is used to measure a student's academic ability.

It is also the responsibility of educators to provide the workforce with workers that have the appropriate introductory job skills to make productive employees. Skill Standards Assessments are the instruments used to identify the knowledge and skill a worker needs in order to be a productive employee. Education and business and industry representatives developed these standards and assessments collectively.

The Agriculture Industry is not highly unionized and the industry labor force is somewhat fragmented as a whole. Consequently, Skill Standards for the Production Agriculture segment of the Agriculture Industry have not been developed on a national level. To accomplish this task at the state level, a group of recognized individuals from the Production Agriculture Industry were brought together to develop a set of Skill Standards that would address the academic, employability and occupational needs of employees in the Production Agriculture industry.

Production Agriculture has two main segments -- plant production and animal production. Both represent a significant market share of the Production Agriculture Industry. The standards address the common core areas that are shared by both of these segments. Once students understand these core areas, they will be able to successfully branch out into any segment of the industry and have a foundation of knowledge that will support the specialization needed to succeed.

#### **Preparation for Tomorrow's Workforce**

Carl D. Perkins Vocational and Technology Act of 1990 mandates broad vocational, rather than job-specific, training and an integration of academic and vocational content. The Act requires programs to provide students with a general understanding of "all aspects of an industry." More recently, the first of the five Indicators of Performance in the new Perkins legislation addresses "student attainment of challenging state-established academic and vocational/technical skill proficiencies."

Skill Standards are the performance specifications that identify the knowledge, skills and abilities, an individual needs to succeed in the workplace. Identifying the necessary skills is critical to preparing students for entry into employment. Skill standards provide a common vocabulary to enhance communication between:

- Employers and Job Seekers—to specify the knowledge, skills, aptitudes and attitudes required for recruitment, hiring, and retention in a company or within an industry.
- Employers and Schools or Job Training programs—to encourage the alignment of school curricula with industry requirements, to update educational objectives as workplace demands change, and to ensure a better return on public and private education and training investments.

•Employers or Job Seekers and Schools or Job Training Programs--to help employees and job seekers make decisions about their own education and training needs in a changing market place.

In the most successful workplaces, the only constant is change. Jobs that were previously simple now require high performance work processes and enhanced skills in order to compete globally. Skill standards reflect these changing workplace realities and are keys for helping applicants and employers enjoy greater career opportunities and achieve higher standards of living and economic security.

### Kentucky's Certification System

Skill standards are important today to educators, employers, and students who desire jobs after graduation from high school. The Division of Career and Technical Education, in conjunction with employers from the agriculture industry, are working together to develop a system to certify that students have attained the necessary skills for employment. The first step in developing this system was the development or adoption of skill standards that describe the necessary occupational, academic and employability skills needed to enter the industry. Mastery of these standards signals to employers that the student is employable and ready to begin employment with the industry.

In order to ensure that students in fact attained the necessary skills described in the standards document, students take an assessment based on the standards. The assessment system includes two components:

Multiple-choice questions specifically testing the mastery of the Skill Standards; and

Problem-based scenarios to test the students problem solving and decision-making skills related to the occupational standards.

Students that successfully complete each of the components at a specified percentage receive an industry-recognized certificate to provide to employers communicating mastery of the standards.

### Program Sequence for Production Agriculture Skill Standards

Students should complete a coherent sequence of courses from the secondary Agriculture Education curriculum. The sequences are developed by Career Major and include Agribusiness, Horticulture, Production, Agricultural Mechanics/Engineering, Forestry/Resource Management and Ag. Processing/Distribution. Courses under each major must also be in the Kentucky Program of Studies.

Three credits are required from the following recommended courses for a student to take the Production Agriculture assessment:

Animal Science  
Equine Science  
Animal Technology  
Advanced Animal Science

Plant and Land Science  
Crop Technology  
Advanced Plant Science

## **Course Descriptions:**

**Animal Science** develops basic knowledge and skills pertaining to livestock identification, selection, nutrition, reproduction and genetics, health management, and marketing of one or more species of farm animals. The latest biotechnological applications will be included.

**Equine Science** develops knowledge and skill pertaining to breed identification and selection, anatomy, physiology, nutrition, genetics and reproductive management, training principles, grooming, health disease, parasite control and sanitation practices.

**Animal Technology** instruction concentrates on the advanced production practices and current biotechnological applications of one or more species of farm animals, based on the local community needs. Hands-on experiences will be emphasized

**Advanced Animal Science** is a freshman-level college course which introduces students to a survey of genetics, reproductive physiology, growth and development, nutrition and digestive physiology, anatomy, meat science and overviews of the dairy, poultry, equine, beef, sheep, swine, and aquaculture industries. Opportunity is provided for students to earn three (3) hours of introductory college credit.

**Plant and Land Science** develops basic scientific knowledge and skills pertaining to management of the land and its effects on food and fiber production, the environment, and the quality of life. The relationship of land to plant growth will be emphasized. Plant composition, reproduction, growth, and current biotechnological advances will be included.

**Crop Technology** instruction concentrates on the production practices and current biotechnological applications of or more agriculture crops. Hands-on experiences will be emphasized. Instruction will include variety selection, seedbed preparation, fertilization, pest, weed and disease control, harvesting, and marketing crops. Current biotechnological applications may be included.

**Advanced Plant Science** is a freshman-level college course, which introduces students to the world of plants. The course is a survey of botany, agronomy, horticulture, soils, forestry, and other areas of plant science. Opportunity is provided for students to earn three (3) hours of introductory college credit.

Leadership development and employability skills are supplemented in all of these courses through the career and technical student organization, **FFA** and through various projects and activities.

This document identifies the skill standards developed to be assessed in the certification process. Current curriculum in Horticulture offered in your school should be aligned to these standards. A crosswalk shows the relationship between the production agriculture skill standards, academic expectations, and the SCANS (Secretary's Commission on Achieving Necessary Skills). SCANS was developed by the U.S. Department of Labor in 1991 with employers from all over the nation. They describe the necessary foundation skills and competencies necessary to succeed in the workplace.

For more information about the skill standards, crosswalks or certification system for Agriculture Education please contact:

Curt Lucas  
Program Consultant  
Kentucky Department of Education  
Division of Career and Technical Education  
500 Mero Street  
(502) 564-3472  
[clucas@kde.state.ky.us](mailto:clucas@kde.state.ky.us)

# PRODUCTION AGRICULTURE SKILL STANDARDS

	<b>OCCUPATIONAL STANDARDS</b>
<b>OA</b>	<b>Apply principles of animal science</b>
OA001	Apply principles of livestock nutrition
OA002	Apply principles of health management
OA003	Utilize appropriate livestock selection techniques
OA004	Understand principles of reproductive physiology and utilization of appropriate technology (synchronization, artificial insemination, embryo transfer)
<b>OB</b>	<b>Apply principles of plant science</b>
OB001	Utilize appropriate variety selection techniques
OB002	Demonstrate ability to read and utilize seed tag information
OB003	Demonstrate acceptable agronomic practices (seeding rates, plant spacing, planting dates)
OB004	Identify appropriate seed bed preparation techniques (no-till, conventional-till, rotations)
OB005	Identify appropriate techniques for harvesting and storage of crops
OB006	Understand plant growth requirements
<b>OC</b>	<b>Utilize industry resources</b>
OC001	Apply use of related electronic technology (email, computer applications, GPS, precision farming, ultrasound, electronic ear tags, and computer feeding)
OC002	Interpret the input of local, state, national, and international economy to production agriculture
OC003	Maintain awareness of current trends in production agriculture through industry associations, trade journals, and internet resources
<b>OD</b>	<b>Implement farm business management practices</b>
OD001	Apply effective record keeping skills including financial records
OD002	Demonstrate knowledge of budgeting and cash flow
OD003	Understand requirements for and sources of credit
OD004	Understand procedures related to buying, leasing, and renting land and/or equipment
OD005	Understand issues related to tax records and filing taxes
<b>OE</b>	<b>Determine appropriate marketing and sales strategies</b>
OE001	Maintain an awareness of world trade issues (GMO's, drought, trade agreements)
OE002	Maintain an awareness of strategies relating to futures, forward cash contracts, storage
OE003	Maintain an awareness of risk management practices (crop insurance)
OE004	Explore marketing resources (marketing clubs, extension programs, brokers, consultants)
OE005	Demonstrate knowledge of specialty agriculture markets (e.g. tobacco, aquaculture, etc.)
OE006	Develop and interpret marketing plans
<b>OF</b>	<b>Apply agricultural mathematics skills</b>
OF001	Utilize basic units of distance, dry and liquid measurements
OF002	Calculate break-even prices
OF003	Calculate proper medicine dosages
OF004	Formulate and evaluate rations
OF005	Determine material supplies
OF006	Calculate area and volume measurements (acreage, storage, stocking)
OF007	Analyze ratios (fertilizer)
<b>OG</b>	<b>Utilize effective labor management techniques</b>
OG001	Develop an understanding of related legal, financial and labor issues
OG002	Demonstrate an understanding of the issues related to utilizing immigrant labor
OG003	Demonstrate effective and efficient delegation of labor
<b>OH</b>	<b>Monitor and control health, diseases, and pests</b>
OH001	Demonstrate effective pest management practices
OH002	Recognize common plant and animal diseases
OH003	Apply appropriate prevention techniques and treatments of plant and animal diseases
OH004	Utilize understanding of plant and animal nutrition in the management and prevention of diseases
OH005	Utilize understanding of varieties and breeds in the management and prevention of diseases
OH006	Understand agriculture's relationship and responsibility to guarantee a safe food supply and a healthy environment.
<b>OI</b>	<b>Distinguish and select appropriate production techniques</b>
OI001	Utilize appropriate production techniques for livestock (beef cattle, dairy cattle, swine, horses, sheep, poultry, specialty animals)
OI002	Utilize appropriate production techniques for crops (corn, soybeans, tobacco, hay)

# PRODUCTION AGRICULTURE SKILL STANDARDS

<b>OJ</b>	<b>Apply best management safety practices</b>
OJ001	Follow theft and security procedures
OJ002	Identify and follow emergency, safety and health rules/procedures
OJ003	Identify hazardous substances in the workplace
OJ004	Identify immediate and real costs of an accident
OJ005	Identify methods of preventing accidents in the workplace
OJ006	Assume responsibility for the personal safety of self and others
OJ007	Report unsafe practices to appropriate personnel
<b>OK</b>	<b>Evaluate related government and legal issues</b>
OK001	Demonstrate an understanding of state and federal agricultural legislation (farm bill)
OK002	Demonstrate an understanding of agricultural law (border disputes, incorporation, liability issues, injury claims, attractive nuisance, farming in populated areas)
OK003	Identify related government agencies, their functions and their programs affects as they relate to the farm.
<b>OL</b>	<b>Utilize industry-related terminology and identification systems</b>
OL001	Identify common agronomic plants, grains, feeds, and seeds
OL002	Identify weeds and other crop pests
OL003	Use appropriate agricultural terminology
OL004	Identify the anatomical parts of domestic livestock
OL005	Demonstrate knowledge of livestock breeds
OL006	Demonstrate knowledge of the livestock carcass
OL007	Recognize livestock pests
<b>OM</b>	<b>Utilize agricultural structures and facilities</b>
OM001	Identify needs of livestock, crop, and equipment storage
OM002	Calculate and analyze cost of storage
OM003	Demonstrate the ability to safely operate basic agriculture equipment
<b>ON</b>	<b>Utilize best management practices as relates to agricultural environmental issues</b>
ON001	Utilize appropriate soil conservation practices
ON002	Identify and apply appropriate water conservation practices
ON003	Analyze and enhance soil fertility
ON004	Assess fertilizer and pesticide applications
ON005	Utilize livestock to enhance soil and water quality
	<b>EMPLOYABILITY STANDARDS</b>
<b>EA</b>	<b>Exhibit workplace skills</b>
EA001	Demonstrate consistently punctual arrival
EA002	Document regular attendance
EA003	Demonstrate enthusiasm and confidence about work and learning new tasks
EA004	Demonstrate appropriate dress and hygiene for successful employment
EA005	Demonstrate the ability to act in a polite and respectful way towards co-workers
EA006	Demonstrate the ability to complete tasks on time and accurately
EA007	Demonstrate the ability to make career decisions
EA008	Prepare a resume and letter of application or interest
EA009	Complete an application for employment
EA010	Participate in an employment interview
EA011	Follow directions and procedures
EA012	Accept constructive criticism
EA013	Work with minimal supervision
<b>EB</b>	<b>Understand workforce issues</b>
EB001	Recognize the difference between a team environment workplace and a conventional workplace
EB002	Identify the characteristics of a diverse workforce
EB003	Identify good ethical characteristics and behaviors
EB004	Differentiate between good and poor business ethics
EB005	Match employee responsibilities to employer expectations
EB006	Define discrimination, harassment and equity
EB007	Demonstrate non-discriminatory behavior
EB008	Maintain confidentiality and sensitivity of company information
<b>EC</b>	<b>Perform business planning and operations procedures</b>
EC001	Plan and manage work schedules



# PRODUCTION AGRICULTURE SKILL STANDARDS

EC002	Maintain receipts and disbursements records
EC003	<b>Maintain inventory records</b>
EC004	Maintain computer records
EC005	Identify possible actions that may lead to customer dissatisfaction.
EC006	Identify the ways that the level of customer satisfaction may affect company success
EC007	Explain the importance of a business reputation
EC008	Identify possible actions that may be used to correct customer dissatisfaction
EC009	Explain the effect of quality on profit
<b>ED</b>	<b>Demonstrate effective communication and teamwork skills</b>
ED001	Organize materials with a logical flow
ED002	Interpret and clarify directions prepared by others
ED003	Communicate with customers
ED004	Understand team concepts
ED005	Write steps of an occupational process using sentences and statements as appropriate
ED006	Select appropriate communication methods
ED007	Identify components of group dynamics
<b>EE</b>	<b>Demonstrate problem solving techniques</b>
EE001	Apply a system of problem solving
	<b>ACADEMIC STANDARDS</b>
<b>AA</b>	<b>Utilize effective workplace communication skills</b>
AA001	Read and process information and follow instructions
AA002	Read material and describe concepts
AA003	Use correct spelling, grammar and punctuation
AA004	Write with accuracy, brevity, and clarity
AA005	Demonstrate knowledge of conflict resolution techniques
AA006	Possess basic computer keyboarding skills
AA007	Demonstrate understanding of basic of interpersonal communication (listening, written, oral, etc.)
AA008	Implement new process steps given oral instructions
AA009	Demonstrate the characteristics of a team player
<b>AA010</b>	Contrast the roles of a team with the role of an individual
AA011	Perform techniques used as a team leader
AA012	Demonstrate productive relationships within the work group
AA013	Organize and deliver a persuasive oral presentation
AA014	Demonstrate proper speaking and presentation characteristics
AA015	Demonstrate basic leadership skills
AA016	Identify the organizational need for profit
AA017	Demonstrate use of an industry-accepted word processing software package
<b>AB</b>	<b>Apply math and measurement skills</b>
AB001	Add, subtract, multiply, and divide four digit numbers with/without the use of a calculator
AB002	Apply basic math functions to solve problems
AB003	Convert between US and metric measurement systems
AB004	Convert fractional measurement to decimal measurement
AB005	Compute within measurement systems
AB006	Document results of measurement activities and calculations
AB008	Calculate with percents, rate, ratio, and proportion with the use of a calculator
AB008	Make reasonable estimates
AB009	Compute calculated measurements
<b>AC</b>	<b>Apply basic science concepts and skills</b>
AC001	Understand scientific plant and animal classification
AC002	Compare the anatomical parts and distinguishing characteristics of plants and animals
AC003	Understand the reproductive processes of plants and animals
AC004	Analyze the process of plant and animal growth and development
AC005	Be aware of biotechnology and its uses in production agriculture
AC006	Explain the use of applied genetics in plants and animals

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OA	OCCUPATIONAL STANDARDS				
OA001	Apply principles of animal science				
	Apply principles of livestock nutrition	2.2 2.3 2.4 2.5 2.6 2.8 2.10 2.13 5.1	Patterns Systems and Interactions Models and Scale Constancy Change Over Time Mathematical Procedures Measurement Data Critical Thinking	C5 C6 C7 C15 F3 F7 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Understands Systems Arithmetic Creative Thinking Decision Making Knows How to Learn
OA002	Apply principles of health management	2.2 2.3 2.5 2.6 2.7 2.10 2.31 5.1 5.4 6.3	Patterns Systems and Interactions Constancy Change Over Time Number Measurement Physical Wellness Critical Thinking Decision Making Expanding Existing Knowledge	C5 C6 C7 C8 C11 C15 C16 C17 F3 F7 F8 F11	<b>Acquires and Evaluates Information</b> Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Serves Clients/Customers Understands Systems Monitors and Corrects Performance Improves and Designs Systems Arithmetic Creative Thinking Decision Making Knows How to Learn
OA003	Utilize appropriate livestock selection techniques	1.3 1.10 2.2 2.5 2.6 5.1 5.4 6.3	Observing Classifying Patterns Constancy Change Over Time Critical Thinking Decision Making Expanding Existing Knowledge	C5 C6 C7 C8 C13 C15 C16 C17 F7 F12 F15	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Negotiates to Arrive at a Decision Understands Systems Monitors and Corrects Performance Improves and Designs Systems Creative Thinking Reasoning Social

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OA004	Understand principles of reproductive physiology and utilization of appropriate technology (synchronization, artificial insemination, embryo transfer)	2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.10 2.11 6.3	Nature of Science Activity Patterns Systems and Interactions Models and Scale Constancy Change Over Time Number Measurement Change Expanding Existing Knowledge	C1 C3 C6 C7 C8 F15	Allocates Time Allocates Materials and Facility Resources Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Social
<b>OB</b>	<b>Apply principles of plant science</b>				
OB001	Utilize appropriate variety selection techniques	1.5 1.6 1.7 1.8 1.9 2.1 2.2 2.3 2.4 2.5 2.6 5.4	Quantifying Computing Visualizing Measuring Mathematical Reasoning Nature of Science Activity Patterns Systems and Interactions Models and Scale Constancy Change Over Time Decision Making	C5 F1 F4 F7 F10 F11	Acquires and Evaluates Information Reading Mathematics Creative Thinking Seeing Things in the Mind's Eye Knows How to Learn
OB002	Demonstrate ability to read and utilize seed tag information	1.1 1.2 5.1 5.4	Accessing Sources of Information Reading Critical Thinking Decision Making	C5 F1 F4 F7 F10 F11	Acquires and Evaluates Information Reading Mathematics Creative Thinking Seeing Things in the Mind's Eye Knows How to Learn
OB003	Demonstrate acceptable agronomic practices (seeding rates, plant spacing, planting dates)	1.1 2.1 2.6 2.7 2.8 2.9 2.10 2.13 5.4	Accessing Sources of Information Nature of Science Activity Change Over Time Number Mathematical Procedures Space and Dimensionality Measurement Data Decision Making	C5 F1 F3 F4 F7 F10 F11	Acquires and Evaluates Information Reading Arithmetic Mathematics Creative Thinking Seeing Things in the Mind's Eye Knows How to Learn

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OB004	Identify appropriate seed bed preparation techniques (no-till, conventional-till, rotations)	2.1 2.8 2.9 5.1 5.4 5.5 6.3	Nature of Science Activity Mathematical Procedures Space and Dimensionality Critical Thinking Decision Making Problem Solving Expanding Existing Knowledge	C5 F1 F3 F4 F7 F10 F11	Acquires and Evaluates Information Reading Arithmetic Mathematics Creative Thinking Seeing Things in the Mind's Eye Knows How to Learn
OB005	Identify appropriate techniques for harvesting and storage of crops	1.5 1.6 1.7 1.8 1.9 2.6 2.9 2.10 5.1 5.4 5.5 6.3	Quantifying Computing Visualizing Measuring Mathematical Reasoning Change Over Time Space and Dimensionality Measurement Critical Thinking Decision Making Problem Solving Expanding Existing Knowledge	C5 F1 F3 F4 F7 F10 F11	Acquires and Evaluates Information Reading Arithmetic Mathematics Creative Thinking Seeing Things in the Mind's Eye Knows How to Learn
OB006	Understand plant growth requirements	2.1 2.2 2.5 2.6 2.7	Nature of Science Activity Patterns Constancy Change Over Time Number	C6 C7 F1	Organizes and Maintains Information Interprets and Communicates Information Reading
<b>OC</b>	<b>Utilize industry resources</b>				
OC001	Apply use of related electronic technology (email, computer applications, GPS, precision farming, ultrasound, electronic ear tags, and computer feeding)	1.16 2.11 2.13 5.1 5.4 5.5 6.3	Using Electronic Technology Change Data Critical Thinking Decision Making Problem Solving Expanding Existing Knowledge	C5 C6 C7 C8 C15 C16 F1 F2 F3 F4 F7 F10 F12 F15	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Understands Systems Monitors and Corrects Performance Reading Writing Arithmetic Mathematics Creative Thinking Seeing Things in the Mind's Eye Reasoning Social

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OC002	Interpret the input of local, state, national, and international economy to production agriculture	2.16 2.18 2.19 4.6 5.1 6.3	Structure and Function of Social System Structure and Function of Economic System Relationship of Geography to Human Activity Open Mind to Alternative Perspectives Critical Thinking Expanding Existing Knowledge	C5 C6 C7 C14 C15 F1 F2 F4 F6 F12	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Works with Cultural Diversity Understands Systems Reading Writing Mathematics Speaking Reasoning
OC003	Maintain awareness of current trends in production agriculture through industry associations, trade journals, and internet resources	1.1 1.2 1.3 1.13 1.16 5.1 6.3	Accessing Sources of Information Reading Observing Visual Arts Using Electronic Technology Critical Thinking Expanding Existing Knowledge	C5 C6 C7 C15 F1 F2 F4 F6 F12	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Understands Systems Reading Writing Mathematics Speaking Reasoning
<b>OD</b>	<b>Implement farm business management practices</b>				
OD001	Apply effective record keeping skills including financial records	2.7 2.8 2.12	Number Mathematical Procedures Mathematical Structures	C6 C15 F3 F12 F15	Organizes and Maintains Information Understands Systems Arithmetic Reasoning Social
OD002	Demonstrate knowledge of budgeting and cash flow	2.7 2.13 5.4	Number Data Decision Making	C15 F1 F3 F12	Understands Systems Reading Arithmetic Reasoning
OD003	Understand requirements for and sources of credit	1.1 1.2 1.4 1.16 2.7 2.8 2.10	Accessing Sources of Information Reading Listening Using Electronic Technology Number Mathematical Procedures Measurement	C15 F1 F2 F3 F4 F5	Understands Systems Reading Writing Arithmetic Mathematics Listening
OD004	Understand procedures related to buying, leasing, and renting land and/or equipment	2.7 2.13	Number Data	C15 F1 F2 F3 F4	Understands Systems Reading Writing Arithmetic Mathematics

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OD005	Understand issues related to tax records and filing taxes	2.7 2.8 1.11	Number Mathematical Procedures Writing	C6 C15 F1 F3 F15	Organizes and Maintains Information Understands Systems Reading Arithmetic Social
<b>OE</b>	<b>Determine appropriate marketing and sales strategies</b>				
OE001	Maintain an awareness of world trade issues (GMO's, drought, trade agreements)	1.1 1.2 1.4 1.5 1.6 1.7 1.8 1.9 2.16 5.1 6.3	Accessing Sources of Information Reading Listening Quantifying Computing Visualizing Measuring Mathematical Reasoning Structure and Function of Social System Critical Thinking Expanding Existing Knowledge	C5 C7 F1 F2 F4 F6 F12	Acquires and Evaluates Information Interprets and Communicates Information Reading Writing Mathematics Speaking Reasoning
OE002	Maintain an awareness of strategies relating to futures, forward cash contracts, storage	2.7 2.9 2.10 2.13 5.4 5.5	Number Space and Dimensionality Measurement Data Decision Making Problem Solving	C5 C15 F1 F3	Acquires and Evaluates Information Understands Systems Reading Arithmetic
OE003	Maintain an awareness of risk management practices (crop insurance)	2.10 5.4	Measurement Decision Making	C5 C15 F1 F3	Acquires and Evaluates Information Understands Systems Reading Arithmetic
OE004	Explore marketing resources (marketing clubs, extension programs, brokers, consultants)	1.1 1.2 1.4 1.16 5.4	Accessing Sources of Information Reading Listening Using Electronic Technology Decision Making	C5 C6 C7 C8 C9 C14 C15 F1 F2 F3 F4	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Participates Works with Cultural Diversity Understands Systems Reading Writing Arithmetic Mathematics

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OE005	Demonstrate knowledge of specialty agriculture markets (e.g. tobacco, aquaculture, etc.)	1.1 1.2 1.3 1.4 2.1 2.3 2.6 5.1 5.4 6.3	Accessing Sources of Information Reading Observing Listening Nature of Science Activity Systems and Interactions Change Over Time Critical Thinking Decision Making Expanding Existing Knowledge	C5 C6 C8 C11 C14 F1 F3 F7	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Serves Clients/Customers Works with Cultural Diversity Reading Arithmetic Creative Thinking
OE006	Develop and interpret marketing plans	1.1 1.2 1.3 1.11 2.22 5.1 5.4	Accessing Sources of Information Reading Observing Writing Convey a Point of View Critical Thinking Decision Making	C5 C8 F3 F7 F11	Acquires and Evaluates Information Uses Computers to Process Information Arithmetic Creative Thinking Knows How to Learn
OF	<b>Apply agricultural mathematics skills</b>				
OF001	Utilize basic units of distance, dry and liquid measurements	2.7 2.8 2.9 2.10 2.11 5.1	Number Mathematical Procedures Space and Dimensionality Measurement Change Critical Thinking	C5 C6 C7 C8 C18 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Reading Writing Arithmetic Decision Making Knows How to Learn
OF002	Calculate break-even prices	1.5 1.6 1.7 1.8 1.9 2.7 2.8 2.13 5.4	Quantifying Computing Visualizing Measuring Mathematical Reasoning Number Mathematical Procedures Data Decision Making	C5 C6 C7 C8 C18 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Reading Writing Arithmetic Decision Making Knows How to Learn

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OF003	Calculate proper medicine dosages	1.5 1.6 1.7 1.8 1.9 2.7 2.8 2.13 5.4	Quantifying Computing Visualizing Measuring Mathematical Reasoning Number Mathematical Procedures Data Decision Making	C5 C6 C7 C8 C18 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Reading Writing Arithmetic Decision Making Knows How to Learn
OF004	Formulate and evaluate rations	1.5 1.6 1.7 1.8 1.9 2.7 2.8 2.13 5.4	Quantifying Computing Visualizing Measuring Mathematical Reasoning Number Mathematical Procedures Data Decision Making	C5 C6 C7 C8 C18 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Reading Writing Arithmetic Decision Making Knows How to Learn
OF005	Determine material supplies	1.1 1.2 1.5 1.6 1.7 1.8 1.9 2.7 2.10 5.1	Accessing Sources of Information Reading Quantifying Computing Visualizing Measuring Mathematical Reasoning Number Measurement Critical Thinking	C5 C6 C7 C8 C18 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Reading Writing Arithmetic Decision Making Knows How to Learn
OF006	Calculate area and volume measurements (acreage, storage, stocking)	2.7 2.8 2.9 2.10 2.13 5.1 5.4	Number Mathematical Procedures Space and Dimensionality Measurement Data Critical Thinking Decision Making	C5 C6 C7 C8 C18 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Reading Writing Arithmetic Decision Making Knows How to Learn



# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OF007	Analyze ratios (fertilizer)	2.7 2.8 2.10 2.13 5.1 5.5	Number Mathematical Procedures Measurement Data Critical Thinking Problem Solving	C5 C6 C7 C8 C18 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Reading Writing Arithmetic Decision Making Knows How to Learn
<b>OG</b>	<b>Utilize effective labor management techniques</b>				
OG001	Develop an understanding of related legal, financial and labor issues	1.1 1.2 1.3 1.4 2.16 2.18 5.5	Accessing Sources of Information Reading Observing Listening Structure and Function of Social System Structure and Function of Economic System Problem Solving	C5 C6 C7 C8 C10 C12 C14 F1 F2 F4 F5 F12 F13 F14 F15 F16	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Teaches Others Exercises Leadership Works with Cultural Diversity Reading Writing Mathematics Listening Reasoning Responsibility Self-Esteem Social Self-Management
OG002	Demonstrate an understanding of the issues related to utilizing immigrant labor	1.1 1.2 1.3 1.4 2.17 2.28 5.1	Accessing Sources of Information Reading Observing Listening Cultural Diversity Structure and Function of Economic System Critical Thinking	C4 C5 C10 C14 F1 F4 F5 F6 F8	Allocates Human Resources Acquires and Evaluates Information Teaches Others Works with Cultural Diversity Reading Mathematics Listening Speaking Decision Making

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OG003	Demonstrate effective and efficient delegation of labor	1.4 1.12 3.3 3.4 3.6 4.2 5.1 5.4	Listening Speaking Adaptable and Flexible Resourceful and Creative Ethical Values Productive Team Skills Critical Thinking Decision Making	C4 C12 F4 F5 F7 F12	Allocates Human Resources Exercises Leadership Mathematics Listening Creative Thinking Reasoning
<b>OH</b>	<b>Monitor and control health, diseases, and pests</b>				
OH001	Demonstrate effective pest management practices	2.1 2.3 2.6 2.7 2.8 2.10 4.4 5.1 5.4 5.5 6.3	Nature of Science Activity Systems and Interactions Change Over Time Number Mathematical Procedures Measurement Rights and Responsibilities Critical Thinking Decision Making Problem Solving Expanding Existing Knowledge	C5 C7 C18 C19 F1 F3 F7 F11 F12	Acquires and Evaluates Information Interprets and Communicates Information Selects Technology Applies Technology to a Task Reading Arithmetic Creative Thinking Knows How to Learn Reasoning
OH002	Recognize common plant and animal diseases	1.3 2.3 2.6	Observing Systems and Interactions Change Over Time	C7 C8 C18 C19 F1 F3 F11	Interprets and Communicates Information Uses Computers to Process Information Selects Technology Applies Technology to a Task Reading Arithmetic Knows How to Learn
OH003	Apply appropriate prevention techniques and treatments of plant and animal diseases	1.3 2.7 2.10 2.37 5.4 6.3	Observing Number Measurement Employability Skills Decision Making Expanding Existing Knowledge	C5 C7 C8 C18 C19 F1 F3 F7 F11 F12	Acquires and Evaluates Information Interprets and Communicates Information Uses Computers to Process Information Selects Technology Applies Technology to a Task Reading Arithmetic Creative Thinking Knows How to Learn Reasoning

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OH004	Utilize understanding of plant and animal nutrition in the management and prevention of diseases	1.3 2.1 2.3 2.6 2.10 5.1 6.3	Observing Nature of Science Activity Systems and Interactions Change Over Time Measurement Critical Thinking Expanding Existing Knowledge	C5 C18 F1 F3 F7 F8 F11	Acquires and Evaluates Information Selects Technology Reading Arithmetic Creative Thinking Decision Making Knows How to Learn
OH005	Utilize understanding of varieties and breeds in the management and prevention of diseases	2.3 2.6 5.1 6.3	Systems and Interactions Change Over Time Critical Thinking Expanding Existing Knowledge	C5 C8 C18 F1 F2 F7 F8 F11	Acquires and Evaluates Information Uses Computers to Process Information Selects Technology Reading Arithmetic Creative Thinking Decision Making Knows How to Learn
OH006	Understand agriculture's relationship and responsibility to guarantee a safe food supply and a healthy environment	2.3 2.6 5.1 6.3	Systems and Interactions Change Over Time Critical Thinking Expanding Existing Knowledge	C5 C8 C18 F1 F2 F7 F8 F11	Acquires and Evaluates Information Uses Computers to Process Information Selects Technology Reading Arithmetic Creative Thinking Decision Making Knows How to Learn
<b>OI</b>	<b>Distinguish and select appropriate production techniques</b>				
OI001	Utilize appropriate production techniques for livestock (beef cattle, dairy cattle, swine, horses, sheep, poultry, specialty animals)	2.1 2.2 2.3 2.5 2.6 2.7 2.8 5.1 5.4 5.5 6.3	Nature of Science Activity Patterns Systems and Interactions Constancy Change Over Time Number Mathematical Procedures Critical Thinking Decision Making Problem Solving Expanding Existing Knowledge	C5 C6 C8 C15 C18 C19 F1 F2 F6 F7 F8	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Understands Systems Selects Technology Applies Technology to a Task Reading Writing Speaking Creative Thinking Decision Making

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OI002	Utilize appropriate production techniques for crops (corn, soybeans, tobacco, hay)	2.1 2.2 2.3 2.5 2.6 2.7 2.8 5.1 5.4 5.5 6.3	Nature of Science Activity Patterns Systems and Interactions Constancy Change Over Time Number Mathematical Procedures Critical Thinking Decision Making Problem Solving Expanding Existing Knowledge	C5 C6 C8 C15 C18 C19 F1 F2 F6 F7 F8	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Understands Systems Selects Technology Applies Technology to a Task Reading Writing Speaking Creative Thinking Decision Making
<b>OJ</b>	<b>Apply best management safety practices</b>				
OJ001	Follow theft and security procedures	1.2 1.3 1.4 2.31 2.34 3.6 4.4 5.1 5.4	Reading Observing Listening Mental and Emotional Wellness Lifetime Physical Activities Ethical Values Rights and Responsibilities Critical Thinking Decision Making	C9 C15 F1 F12 F15 F16	Participates Understands Systems Reading Reasoning Social Self-Management
OJ002	Identify and follow emergency, safety and health rules/procedures	1.2 1.3 1.4 2.32 4.4 5.1 5.4	Reading Observing Listening Mental and Emotional Wellness Rights and Responsibilities Critical Thinking Decision Making	C5 C6 C16 F1 F2 F4 F7 F12	Acquires and Evaluates Information Organizes and Maintains Information Monitors and Corrects Performance Reading Writing Mathematics Creative Thinking Reasoning
OJ003	Identify hazardous substances in the workplace	1.1 1.2 1.3 1.4 2.1 2.31	Decision Making Reading Observing Listening Nature of Science Activity Mental and Emotional Wellness	C5 C6 C16 F1 F2 F4 F7 F12	Acquires and Evaluates Information Organizes and Maintains Information Monitors and Corrects Performance Reading Writing Mathematics Creative Thinking Reasoning

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OJ004	Identify immediate and real costs of an accident	1.2 1.3 1.4 2.7 2.8 2.10 5.1 5.4	Reading Observing Listening Number Mathematical Procedures Measurement Critical Thinking Decision Making	C5 C6 F1 F3 F7 F8 F11 F12	Acquires and Evaluates Information Organizes and Maintains Information Reading Arithmetic Creative Thinking Decision Making Know How to Learn Reasoning
OJ005	Identify methods of preventing accidents in the workplace	1.2 1.3 1.4 4.4 5.1 5.5 6.1	Reading Observing Listening Rights and Responsibilities Critical Thinking Problem Solving Applying Multiple Perspectives	C5 C6 F1 F2 F7 F8 F11 F12	Acquires and Evaluates Information Organizes and Maintains Information Reading Writing Creative Thinking Decision Making Knows How to Learn Reasoning
OJ006	Assume responsibility for the personal safety of self and others	2.31 2.37 3.5 3.6 4.1 4.2 4.3 4.4	Mental and Emotional Wellness Employability Skills Self-Control and Self-Discipline Ethical Values Interpersonal Skills Productive Team Skills Consistent, Responsive, Caring Behavior Rights and Responsibilities	C9 C10 C12 C14 C16 F1 F2 F4 F5 F7 F8 F11 F12 F15	Participates Teaches Others Exercises Leadership Works with Cultural Diversity Monitors and Corrects Performance Reading Writing Mathematics Listening Creative Thinking Decision Making Knows How to Learn Reasoning Social
OJ007	Report unsafe practices to appropriate personnel	2.30 2.31 3.2 3.6 4.1 4.2 4.3 4.4	Consumerism Mental and Emotional Wellness Healthy Lifestyle Ethical Values Interpersonal Skills Productive Team Skills Consistent, Responsive, Caring Behavior Rights and responsibilities	C6 C7 C9 C12 F1 F5 F16	Organizes and Maintains Information Interprets and Communicates Information Participates Exercises Leadership Reading Listening Self-Management

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations			SCANS
OK	Evaluate related government and legal issues				
OK001	Demonstrate an understanding of state and federal agricultural legislation (farm bill)	1.1 1.2 1.3 2.15 2.18 2.19 2.20 5.1	Accessing Sources of Information Reading Observing Structure and Function of Political System Structure and Function of Economic System Relationship of Geography to Human Activity Historical Perspective Critical Thinking	C5 C6 C8 C15 F1 F2 F4 F11	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Mathematics Knows How to Learn
OK002	Demonstrate an understanding of agricultural law (border disputes, incorporation, liability issues, injury claims, attractive nuisance, farming in populated areas)	1.1 1.2 1.3 1.4 2.15 2.16 2.18 2.19	Accessing Sources of Information Reading Observing Listening Structure and Function of Political System Structure and Function of Social System Structure and Function of Economic System Relationship of Geography to Human Activity	C6 C8 C15 F1 F2 F4 F11	Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Mathematics Knows How to Learn
OK003	Identify related government agencies, their functions and their programs affects as they relate to the farm	1.1 1.2 1.3 1.4 2.15 2.16	Accessing Sources of Information Reading Observing Listening Structure and Function of Political System Structure and Function of Social System	C6 C8 C15 F1 F2 F4 F11	Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Mathematics Knows How to Learn
OL	Utilize industry-related terminology and identification systems				
OL001	Identify common agronomic plants, grains, feeds, and seeds	1.1 1.2 1.3 1.16 2.1	Accessing Sources of Information Reading Observing Using Electronic Technology Nature of Science Activity	C6 C8 F1 F2 F9	Organizes and Maintains Information Uses Computers to Process Information Reading Writing Problem Solving
OL002	Identify weeds and other crop pests	1.1 1.2 1.3 1.16 2.1	Accessing Sources of Information Reading Observing Using Electronic Technology Nature of Science Activity	C6 C8 F1 F2	Organizes and Maintains Information Uses Computers to Process Information Reading Writing

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
OL003	Use appropriate agricultural terminology	1.1 1.2 1.3 1.4 1.12 1.16 5.1	Accessing Sources of Information Reading Observing Listening Speaking Using Electronic Technology Critical Thinking	C5 C6 C8 F1 F2 F9	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Reading Writing Problem Solving
OL004	Identify the anatomical parts of domestic livestock	1.1 1.2 1.3 1.4 1.12 1.16 2.22 5.1	Accessing Sources of Information Reading Observing Listening Speaking Using Electronic Technology Convey a Point of View Critical Thinking	C5 C6 C8 F1 F2 F9	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Reading Writing Problem Solving
OL005	Demonstrate knowledge of livestock breeds	1.1 2.2 2.3 2.4 2.5 5.1	Accessing Sources of Information Patterns Systems and Interactions Models and Scale Constancy Critical Thinking	C5 C6 C8 F1 F2 F9	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Reading Writing Problem Solving
OL006	Demonstrate knowledge of the livestock carcass	1.1 2.2 2.3 2.4 2.5 5.1	Accessing Sources of Information Patterns Systems and Interactions Models and Scale Constancy Critical Thinking	C5 C6 C8 F1 F2 F9	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Reading Writing Problem Solving
OL007	Recognize livestock pests	1.1 2.2 2.3 2.4 2.5	Accessing Sources of Information Patterns Systems and Interactions Models and Scale Constancy	C5 C6 C8 F1 F2 F9	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Reading Writing Problem Solving

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations			SCANS
OM	Utilize agricultural structures and facilities				
OM001	Identify needs of livestock, crop, and equipment storage	1.1 1.2 1.3 1.4 2.9 5.1 5.5	Accessing Sources of Information Reading Observing Listening Space and Dimensionality Critical Thinking Problem Solving	C5 C6 C8 F1 F2 F3 F7 F8	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Reading Writing Arithmetic Creative Thinking Decision Making
OM002	Calculate and analyze cost of storage	1.1 1.2 1.3 1.4 1.16 2.7 2.9 2.10 5.1	Accessing Sources of Information Reading Observing Listening Using Electronic Technology Number Space and Dimensionality Measurement Critical Thinking	C5 C6 C8 C19 F1 F2 F3 F8	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Applies Technology to a Task Reading Writing Arithmetic Decision Making
OM003	Demonstrate the ability to safely operate basic agriculture equipment	1.1 1.2 1.3 1.4 3.2 3.5 3.7 4.4 5.4 6.3	Accessing Sources of Information Reading Observing Listening Healthy Lifestyle Self-Control and Self-Discipline Learn On One's Own Rights and Responsibilities Decision Making Expanding Existing Knowledge	C5 C6 C15 C16 C18 C19 C20 F1 F3 F4 F7 F8 F11 F12	Acquires and Evaluates Information Organizes and Maintains Information Understands Systems Monitors and Corrects Performance Selects Technology Applies Technology to a Task Maintains and Troubleshoots Technology Reading Arithmetic Mathematics Creative Thinking Decision Making Knows How to Learn Reasoning



# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
ON	Utilize best management practices as relates to agricultural environmental issues				
ON001	Utilize appropriate soil conservation practices	1.1 1.2 1.3 1.4 2.1 2.3 2.5 2.6 2.7 2.10 5.4	Accessing Sources of Information Reading Observing Listening Nature of Science Activity Systems and Interactions Constancy Change Over Time Number Measurement Decision Making	C5 C6 C7 C8 C17 C18 C19 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Improves and Designs Systems Selects Technology Applies Technology to a Task Reading Writing Arithmetic Decision Making Knows How to Learn
ON002	Identify and apply appropriate water conservation practices	1.1 1.2 1.3 1.4 2.1 2.3 2.5 2.6 2.7 2.10 5.1	Accessing Sources of Information Reading Observing Listening Nature of Science Activity Systems and Interactions Constancy Change Over Time Number Measurement Critical Thinking	C5 C6 C7 C8 C17 C18 C19 F1 F2 F3 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Improves and Designs Systems Selects Technology Applies Technology to a Task Reading Writing Arithmetic Decision Making Knows How to Learn
ON003	Analyze and enhance soil fertility	1.1 1.2 1.3 1.4 2.1 2.3 2.7 2.8 5.1 5.4 6.3	Accessing Sources of Information Reading Observing Listening Nature of Science Activity Systems and Interactions Number Mathematical Procedures Critical Thinking Decision Making Expanding Existing Knowledge	C5 C6 C18 C19 F1 F2 F3 F4 F7 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Selects Technology Applies Technology to a Task Reading Writing Arithmetic Mathematics Creative Thinking Decision Making Knows How to Learn

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
ON004	Assess fertilizer and pesticide applications	1.1 1.2 1.3 1.4 2.1 2.3 2.7 2.8 5.1 5.4 6.3	Accessing Sources of Information Reading Observing Listening Nature of Science Activity Systems and Interactions Number Mathematical Procedures Critical Thinking Decision Making Expanding Existing Knowledge	C5 C6 C18 C19 F1 F2 F3 F4 F7 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Selects Technology Applies Technology to a Task Reading Writing Arithmetic Mathematics Creative Thinking Decision Making Knows How to Learn
ON005	Utilize livestock to enhance soil and water quality	1.1 1.2 1.3 1.4 2.1 2.3 2.7 2.8 5.1 5.4 6.3	Accessing Sources of Information Reading Observing Listening Nature of Science Activity Systems and Interactions Number Mathematical Procedures Critical Thinking Decision Making Expanding Existing Knowledge	C5 C6 C18 C19 F1 F2 F3 F4 F7 F8 F11	Acquires and Evaluates Information Organizes and Maintains Information Selects Technology Applies Technology to a Task Reading Writing Arithmetic Mathematics Creative Thinking Decision Making Knows How to Learn
	<b>EMPLOYABILITY STANDARDS</b>				
<b>EA</b>	<b>Exhibit workplace skills</b>				
EA001	Demonstrate consistently punctual arrival	3.5	Self-Control and Self-Discipline	F13 F16 F17	Responsibility Self-Management Integrity/Honesty
EA002	Document regular attendance	3.5	Self-Control and Self-Discipline	C6 F13 F16 F17	Organizes and Maintains Information Responsibility Self-Management Integrity/Honesty
EA003	Demonstrate enthusiasm and confidence about work and learning new tasks	2.36 2.37 3.5 3.7	Employability Skills Cultural Diversity Self-Control and Self-Discipline Learn On One's Own	C9 C12 F5 F6 F11 F15 F16	Participates Exercises Leadership Listening Speaking Knows How to Learn Social Self-Management

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
EA004	Demonstrate appropriate dress and hygiene for successful employment	2.29 2.32 2.37 3.5	Consumerism Mental and Emotional Wellness Employability Skills Self-Control and Self-Discipline	C6 F1 F5 F16	Organizes and Maintains Information Reading Listening Self-Management
EA005	Demonstrate the ability to act in a polite and respectful way towards co-workers	2.37 2.26 3.5 4.1 4.3	Employability Skills Diversity Self-Control and Self-Discipline Interpersonal Skills Consistent, Responsive, Caring Behavior	F5 F6	Listening Speaking
EA006	Demonstrate the ability to complete tasks on time and accurately	2.37 2.26 2.38 3.5 4.3	Employability Skills Diversity Resumes, Interviews and Advancement Self-Control and Self-Discipline Consistent, Responsive, Caring Behavior	C6 C9 C11 C16 F13 F16 F17	Organizes and Maintains Information Participates Serves Clients/Customers Monitors and Corrects Performance Responsibility Self-Management Integrity/Honesty
EA007	Demonstrate the ability to make career decisions	2.36 2.37 2.38 5.1	Employability Skills Cultural Diversity Resumes, Interviews and Advancement Critical Thinking	C5 F8 F11 F13 F14	Acquires and Evaluates Information Decision Making Knows How to Learn Responsibility Self-Esteem
EA008	Prepare a resume and letter of application or interest	2.38 1.11	Resumes, Interviews and Advancement Writing	C8 C19 F1 F2 F11	Uses Computers to Process Information Applies Technology to a Task Reading Writing Knows How to Learn
EA009	Complete an application for employment	2.38 1.11	Resumes, Interviews and Advancement Writing	C7 C19 F1 F2	Interprets and Communicates Information Applies Technology to a Task Reading Writing
EA010	Participate in an employment interview	2.38	Resumes, Interviews and Advancement	C7 C14 F5 F6 F12 F15 F16 F17	Interprets and Communicates Information Works with Cultural Diversity Listening Speaking Reasoning Social Self-Management Integrity/Honesty
EA011	Follow directions and procedures	1.2 1.3 1.4 2.26	Reading Observing Listening Diversity	C6 F12 F13	Organizes and Maintains Information Reasoning Responsibility

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards			Kentucky Academic Expectations	SCANS	
EA012	Accept constructive criticism	2.26 4.1 4.4 4.6	Diversity Interpersonal Skills Rights and Responsibilities Open Mind to Alternative Perspectives	C6 C7 C9 C12 C16 F5 F6 F11 F13 F14 F16	Organizes and Maintains Information Interprets and Communicates Information Participates Exercises Leadership Monitors and Corrects Performance Listening Speaking Knows How to Learn Responsibility Self-Esteem Self-Management
EA013	Work with minimal supervision	2.26 3.3 3.4 3.5 3.7 4.4 5.4 6.1	Diversity Adaptable and Flexible Resourceful and Creative Self-Control and Self-Discipline Learn On One's Own Rights and Responsibilities Decision Making Applying Multiple Perspectives	C6 C7 C8 C9 C12 C16 C18 C19 F1 F2 F3 F4 F5 F7 F8 F9 F11 F12 F13 F16 F17	Organizes and Maintains Information Interprets and Communicates Information Uses Computers to Process Information Participates Exercises Leadership Monitors and Corrects Performance Selects Technology Applies Technology to a Task Reading Writing Arithmetic Mathematics Listening Creative Thinking Decision Making Problem Solving Knows How to Learn Reasoning Responsibility Self-Management Integrity/Honesty
<b>EB</b>	<b>Understand workforce issues</b>				
EB001	Recognize the difference between a team environment workplace and a conventional workplace	1.2 1.3 1.4 4.1 4.2 4.5	Reading Observing Listening Interpersonal Skills Productive Team Skills Multicultural Sensitivity	C7 C9 C15	Interprets and Communicates Information Participates Understands Systems

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
EB002	Identify the characteristics of a diverse workforce	2.26 2.27 4.5 4.6	Diversity Language Multicultural Sensitivity Open Mind to Alternative Perspectives	C7 C9 C14 F13 F15 F16 F17	Interprets and Communicates Information Participates Works with Cultural Diversity Responsibility Social Self-Management Integrity/Honesty
EB003	Identify good ethical characteristics and behaviors	2.29 2.32 3.6	Consumerism Community Health System Ethical Values	C7 C9 F13 F15 F16 F17	Interprets and Communicates Information Participates Responsibility Social Self-Management Integrity/Honesty
EB004	Differentiate between good and poor business ethics	3.6 5.1	Ethical Values Critical Thinking	C5 C6 C7 F17	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Integrity/Honesty
EB005	Match employee responsibilities to employer expectations	3.3 4.1 4.4	Adaptable and Flexible Interpersonal Skills Rights and Responsibilities	C6 C7 C11 C16 F13 F17	Organizes and Maintains Information Interprets and Communicates Information Serves Clients/Customers Monitors and Corrects Performance Responsibility Integrity/Honesty
EB006	Define discrimination, harassment and equity	2.16 2.26 2.30 2.32 2.33 2.37 3.6	Structure and Function of Social System Cultural Diversity Consumerism Mental and Emotional Wellness Community Health System Employability Skills Ethical Values	C6 C7 C14 F5 F6 F11 F12 F16 F17	Organizes and Maintains Information Interprets and Communicates Information Works with Cultural Diversity Listening Speaking Knows How to Learn Reasoning Self-Management Integrity/Honesty
EB007	Demonstrate non-discriminatory behavior	3.5 4.3	Self-Control and Self-Discipline Consistent, Responsive, Caring Behavior	C7 F1 F5 F6 F13 F15 F16 F17	Interprets and Communicates Information Reading Listening Speaking Responsibility Social Self-Management Integrity/ Honesty

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
EB008	Maintain confidentiality and sensitivity of company information	3.6 3.5	Ethical Values Self-Control and Self-Discipline	C6 C7 F13 F16 F17	Organizes and Maintains Information Interprets and Communicates Information Responsibility Self-Management Integrity/Honesty
<b>EC</b>	<b>Perform business planning and operations procedures</b>				
EC001	Plan and manage work schedules	1.10 1.11 5.1	Classifying Writing Critical Thinking	C4 C5 C6 C12 F8 F12 F13	Allocates Human Resources Acquires and Evaluates Information Organizes and Maintains Information Exercises Leadership Decision Making Reasoning Responsibility
EC002	Maintain receipts and disbursements records	1.10 1.11	Classifying Writing	C6 F17	Organizes and Maintains Information Integrity/Honesty
EC003	<b>Maintain inventory records</b>	1.16	Using Electronic Technology	C6 C19	Organizes and Maintains Information Applies Technology to a Task
EC004	Maintain computer records	1.2 1.3 1.4 4.1 5.4 6.1	Reading Observing Listening Interpersonal Skills Decision Making Applying Multiple Perspectives	C5 C6	Acquires and Evaluates Information Organizes and Maintains Information
EC005	Identify possible actions that may lead to customer dissatisfaction.	1.2 1.3 1.4 4.1 5.1 6.2	Reading Observing Listening Interpersonal Skills Critical Thinking Developing New Knowledge	C7 C11 F5 F6 F7 F9 F13 F15 F16	Interprets and Communicates Information Serves Clients/Customers Listening Speaking Creative Thinking Problem Solving Responsibility Social Self-Management
EC006	Identify the ways that the level of customer satisfaction may affect company success	1.11 1.12 5.1	Writing Speaking Critical Thinking	C7 C11 F7	Interprets and Communicates Information Serves Clients/Customers Creative Thinking
EC007	Explain the importance of a business reputation	1.2 1.3 1.4 1.11 1.12 4.1	Reading Observing Listening Writing Speaking Interpersonal Skills	C7 C11	Interprets and Communicates Information Serves Clients/Customers

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
EC008	Identify possible actions that may be used to correct customer dissatisfaction	1.2 1.3 1.4 1.11 1.12 4.1 5.1	Reading Observing Listening Writing Speaking Interpersonal Skills Critical Thinking	C5 C7 C11	Acquires and Evaluates Information Interprets and Communicates Information Serves Clients/Customers
EC009	Explain the effect of quality on profit	1.2 1.3 1.4 1.11 1.12 2.18	Reading Observing Listening Writing Speaking Structure and Function of Economic System	C7 F2 F6	Interprets and Communicates Information Writing Speaking
<b>ED</b>	<b>Demonstrate effective communication and teamwork skills</b>				
ED001	Organize materials with a logical flow	1.2 1.10 5.1	Reading Classifying Critical Thinking	C6 F12	Organizes and Maintains Information Reasoning
ED002	Interpret and clarify directions prepared by others	1.2 1.3 1.4 5.1	Reading Observing Listening Critical Thinking	C7 F1 F5 F12 F15 F16	Interprets and Communicates Information Reading Listening Reasoning Social Self-Management
ED003	Communicate with customers	1.12 4.1	Speaking Interpersonal Skills	C7 C11 F5 F6	Interprets and Communicates Information Serves Clients/Customers Listening Speaking
ED004	Understand team concepts	4.2	Productive Team Skills	C7 C9	Interprets and Communicates Information Participates
ED005	Write steps of an occupational process using sentences and statements as appropriate	1.11 5.1	Writing Critical Thinking	C7 F2 F12	Interprets and Communicates Information Writing Reasoning
ED006	Select appropriate communication methods	1.11 1.12 5.5	Writing Speaking Problem Solving	C3 C6 C13 C16 C18 F1 F5 F9	Allocates Materials and Facility Resources Organizes and Maintains Information Negotiates to Arrive at a Decision Monitors and Corrects Performance Selects Technology Reading Listening Problem Solving

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
ED007	Identify components of group dynamics	1.2 1.3 1.4 2.16 4.5	Reading Observing Listening Structure and Function of Social System Multicultural Sensitivity	C7 F2 F6	Interprets and Communicates Information Writing Speaking
<b>EE</b>	<b>Demonstrate problem solving techniques</b>				
EE001	Apply a system of problem solving	1.1 1.10 5.1 5.2 5.3 5.4 5.5 6.1	Accessing Sources of Information Classifying Critical Thinking Creative Thinking Conceptualizing Decision Making Problem Solving Applying Multiple Perspectives	C7 C9 C12 C16 C20 F2 F6 F9	Interprets and Communicates Information Participates Exercises Leadership Monitors and Corrects Performance Maintains and Troubleshoots Technology Writing Speaking Problem Solving
	<b>ACADEMIC STANDARDS</b>				
<b>AA</b>	<b>Utilize effective workplace communication skills</b>				
AA001	Read and process information and follow instructions	1.1 1.2	Accessing Sources of Information Reading	F2 F6	Writing Speaking
AA002	Read material and describe concepts	1.11 1.2 1.11 1.12	Writing Reading Writing Speaking	C7 F1 F11	Interprets and Communicates Information Reading Knows How to Learn
AA003	Use correct spelling, grammar and punctuation	1.11	Writing	C7 F2	Interprets and Communicates Information Writing
AA004	Write with accuracy, brevity, and clarity	1.11	Writing	C7 F2	Interprets and Communicates Information Writing
AA005	Demonstrate knowledge of conflict resolution techniques	2.16 2.26 2.32 4.1 5.4	Structure and Function of Social System Language Community Health System Interpersonal Skills Decision Making	C5 C9 C12 F2 F6 F8 F9 F12 F15 F16	Acquires and Evaluates Information Participates Exercises Leadership Writing Speaking Decision Making Problem Solving Reasoning Social Self-Management
AA006	Possess basic computer keyboarding skills	1.16	Using Electronic Technology	C8	Uses Computers to Process Information



# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
AA007	Demonstrate understanding of basic of interpersonal communication (listening, written, oral, etc.)	1.2 1.3 1.4 1.11 1.12 4.1 5.2	Reading Observing Listening Writing Speaking Interpersonal Skills Creative Thinking	C5 C6 C7 F1 F2 F5 F6	Acquires and Evaluates Information Organizes and Maintains Information Interprets and Communicates Information Reading Writing Listening Speaking
AA008	Implement new process steps given oral instructions	1.4	Listening	C6 C7 C19 F5	Organizes and Maintains Information Interprets and Communicates Information Applies Technology to a Task Listening
AA009	Demonstrate the characteristics of a team player	4.2	Productive Team Skills	C9 F13 F16 F17	Participates Responsibility Self-Management Integrity/Honesty
AA010	Contrast the roles of a team with the role of an individual	4.2 5.1	Productive Team Skills Critical Thinking	C7 F2 F6 F8	Interprets and Communicates Information Writing Speaking Decision Making
AA011	Perform techniques used as a team leader	4.1 4.2 4.4 4.5	Interpersonal Skills Productive Team Skills Rights and Responsibilities Multicultural Sensitivity	C6 C7 C12 F5 F6 F13 F14 F16 F17	Organizes and Maintains Information Interprets and Communicates Information Exercises Leadership Listening Speaking Responsibility Self-Esteem Self-Management Integrity/Honesty
AA012	Demonstrate productive relationships within the work group	4.2	Productive Team Skills	C9 F13 F16	Participates Responsibility Self-Management
AA013	Organize and deliver a persuasive oral presentation	1.11 1.12 3.5 5.3	Writing Speaking Self Control and Self Discipline Conceptualizing	C6 F2 F7	Organizes and Maintains Information Writing Creative Thinking
AA014	Demonstrate proper speaking and presentation characteristics	1.12	Speaking	F6	Speaking
AA015	Demonstrate basic leadership skills	1.12 3.5	Speaking Self Control and Self Discipline	C12 F13 F16	Exercises Leadership Responsibility Self-Management

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
AA016	Identify the organizational need for profit	2.18 5.1	Structure and Function of Economic System Critical Thinking	C5 F2 F6 F12	Acquires and Evaluates Information Writing Speaking Reasoning
AA017	Demonstrate use of an industry-accepted word processing software package	1.16 1.12	Using Electronic Technology Speaking	C8 F6	Uses Computers to Process Information Speaking
<b>AB</b>	<b>Apply math and measurement skills</b>				
AB001	Add, subtract, multiply, and divide four digit numbers with/without the use of a calculator	2.7 2.8	Number Mathematical Procedures	F3	Arithmetic
AB003	Apply basic math functions to solve problems	2.7 2.8	Number Mathematical Procedures	F4	Mathematics
AB004	Convert between US and metric measurement systems	2.7 2.8 2.10 5.1	Number Mathematical Procedures Measurement Decision Making	F4 F12	Mathematics Reasoning
AB005	Convert fractional measurement to decimal measurement	2.7 2.8 2.10	Number Mathematical Procedures Measurement	F4 F12	Mathematics Reasoning
AB006	Compute within measurement systems	2.7 2.8 2.10 5.4	Number Mathematical Procedures Measurement Decision Making	F4 F12	Mathematics Reasoning
AB007	Document results of measurement activities and calculations	1.5 1.6 1.7 1.8 1.9 1.11 5.4	Quantifying Computing Visualizing Measuring Mathematical Reasoning Writing Decision Making	C7 F4 F12	Interprets and Communicates Information Mathematics Reasoning
AB008	Calculate with percents, rate, ratio, and proportion with the use of a calculator	2.7 2.8 5.1	Number Mathematical Procedures Critical Thinking	F4 F12	Mathematics Reasoning
AB009	Make reasonable estimates	2.7 2.8 5.4	Number Mathematical Procedures Decision Making	F3 F12	Arithmetic Reasoning
AB010	Compute calculated measurements	1.5 1.6 1.7 1.8 1.9 2.10	Quantifying Computing Visualizing Measuring Mathematical Reasoning Measurement	F3 F4 F12	Arithmetic Mathematics Reasoning

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards			Kentucky Academic Expectations		SCANS
AC	Apply basic science concepts and skills				
AC001	Understand scientific plant and animal classification	1.1 1.2 1.3 1.10 2.2 2.3	Accessing Sources of Information Reading Observing Classifying Patterns Systems and Interactions	C6 C8 C15 F1 F2 F10	Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Seeing Things in the Mind's Eye
AC002	Compare the anatomical parts and distinguishing characteristics of plants and animals	1.1 1.2 1.3 2.3 2.4	Accessing Sources of Information Reading Observing Systems and Interactions Models and Scale	C5 C6 C8 C15 F1 F2 F10	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Seeing Things in the Mind's Eye
AC003	Understand the reproductive processes of plants and animals	1.1 1.2 1.3 2.1 2.3 2.4 6.3	Accessing Sources of Information Reading Observing Nature of Science Activity Systems and Interactions Models and Scale Expanding Existing Knowledge	C6 C8 C15 F1 F2 F10	Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Seeing Things in the Mind's Eye
AC004	Analyze the process of plant and animal growth and development	1.1 1.2 1.3 1.10 2.1 2.3 2.6 5.1 5.3 5.4 6.2 6.3	Accessing Sources of Information Reading Observing Classifying Nature of Science Activity Systems and Interactions Change Over Time Critical Thinking Conceptualizing Decision Making Developing New Knowledge Expanding Existing Knowledge	C5 C6 C8 C15 F1 F2 F10	Acquires and Evaluates Information Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Seeing Things in the Mind's Eye
AC005	Be aware of biotechnology and its uses in production agriculture	1.1 1.2 1.3 1.4 2.1 2.3 6.3	Accessing Sources of Information Reading Observing Listening Nature of Science Activity Systems and Interactions Expanding Existing Knowledge	C6 C8 C15 F1 F2 F10	Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Seeing Things in the Mind's Eye

# Production Agriculture Crosswalk of Skill Standards to Academic Expectations and SCANS

Skill Standards		Kentucky Academic Expectations		SCANS	
AC006	Explain the use of applied genetics in plants and animals	1.1 1.11 1.12 2.1 2.2 2.3 2.5 2.6 6.3	Accessing Sources of Information Writing Speaking Nature of Science Activity Patterns Systems and Interactions Constancy Change Over Time Expanding Existing Knowledge	C6 C8 C15 F1 F2 F10	Organizes and Maintains Information Uses Computers to Process Information Understands Systems Reading Writing Seeing Things in the Mind's Eye